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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,537	01/04/2007	Johan Vanbrabant	016782-0367	2985
22428 7590 05/25/2010 FOLEY AND LARDNER LLP SUITE 500 3000 K STREET NW WASHINGTON, DC 20007			EXAMINER CHEN, VIVIAN	
			ART UNIT 1787	PAPER NUMBER
			MAIL DATE 05/25/2010	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/591,537

**Applicant(s)**

VANBRABANT, JOHAN

**Examiner**

Vivian Chen

**Art Unit**

1787

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 February 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 22-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/CIS-8)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date 09/01/2006; 1/4/2007

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election of Species (a)(i) in the reply filed on 2/18/2010 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
2. Claims 22-24 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 2/18/2010.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over:  
RUBNER ET AL (US 5,536,573),  
in view of HAN ET AL (US 5,225,495).

RUBNER ET AL discloses metal surfaces coated with dense, highly uniform self-assembled layers of conductive polymers (e.g., (e.g., polyanilines, polythiophenes, etc.) modified with negative (i.e., anionic) groups, wherein the coating layer(s) have a typical thickness of 1-25 nm. Said negative-charge containing layers provide support and attachment points for layers with positive (i.e., cationic) charges. The coatings are useful in producing anticorrosion coatings on metals. (entire document, lines 47-56, col. 2; line 30-64, col. 3; line 1-55, col. 5; line 1-31, col. 6; line 15-60, col. 9; etc.) However, the reference does not explicitly disclose a method of application using a solution of a monomer and a dopant.

HAN ET AL discloses that it is well known to dope conductive polymers (e.g., polyaniline) with a wide variety of dopants (e.g., iron-based compounds, lithium-based compounds, sulfonate-based compounds, phosphonate-based compounds, etc.) to introduce ionic groups in order to modify the electrical conductivity of the conductive polymers to meet predetermined criteria. The reference further discloses the formation of coatings of doped conductive polymers by applying a coating containing a monomer of the conductive polymer to a surface, wherein the monomer is then polymerized and wherein the dopant is present during the polymerization. (line 60-68, col. 2; line 45, col. 23 to line 3, col. 31)

It would have been obvious to a person of ordinary skill in the art at the time the invention was made apply self-assembling coatings comprising conductive polymers with negative groups to metal surfaces as disclosed in RUBNER ET AL to produce useful anticorrosion coatings. It also would have been obvious to use conventional coating methods for modified (i.e., doped) conductive polymers using solutions and dopants as disclosed in HAN ET AL in order to form the anionic (i.e., negative charge containing) coating layers. One of ordinary

skill in the art would have used conventional charge-based polymerization methods (e.g., providing a metal surface with a positive charge) (claim 2-3, 18-19) in order to encourage the formation of high density, defect-free (claim 7) anionic coating layers on said surface. It would have been obvious to use known dopant systems (claim 9) to incorporate positive groups into the positive charge containing conductive polymers layers adhered to the negative charge containing layers (claim 8), depending on the specific electrical characteristics required for specific applications. One of ordinary skill in the art would have applied the coatings of RUBNER ET AL to known metal substates (e.g., single or braided wires, strips, metal laminates, etc.) (claims 10-14) which are typically subject to corrosion (e.g., zinc, steel, etc.) (claim 15). It is also well known in the art to coat metal substrate (e.g., wires, strips, etc.) in thermoplastic coating to protect against abrasion, electrical interference, and/or provide insulation and/or easy visual identification (claim 16-17). It would have been obvious to elect the anionic groups in the negative charge-containing conductive polymers (claim 20-21) in order to obtain the optimum corrosion resistant characteristics based on the requirements of specific usage conditions.

***Conclusion***

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vivian Chen whose telephone number is (571) 272-1506. The examiner can normally be reached on Monday through Thursday from 8:30 AM to 6 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho, can be reached on (571) 272-1123. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

The General Information telephone number for Technology Center 1700 is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

May 21, 2010

/Vivian Chen/

Primary Examiner, Art Unit 1787